LAKE MEAD NATIONAL RECREATION AREA

# SUBMERGED CULTURAL RESOURCES PLAN AND ENVIRONMENTAL ASSESSMENT

**Lake Mead National Recreation Area**
**Clark County, Nevada**
**Mohave County, Arizona**

November 2005

US Department of the Interior, National Park Service

## TABLE OF CONTENTS

## LIST OF FIGURES



## LIST OF TABLES



## APPENDICES

*Page left intentionally blank.*

## SECTION I: PURPOSE OF AND NEED FOR ACTION

### Introduction

The National Park Service (NPS) is considering alternatives for the implementation of a Submerged Cultural Resources Management Plan at Lake Mead National Recreation Area (NRA).

The environmental assessment (EA) evaluates the no action alternative and two action alternatives. The alternatives analyzed are: Alternative A: No Action-Unrestricted Access and Recreational Use; Alternative B: Restriction of Access and Recreational Use; and Alternative C: Managed Access and Recreational Use. This document also includes a discussion of alternatives that have been ruled out and justifications for their elimination.

### Purpose and Need

The completion of Hoover Dam and subsequent creation of Lake Mead resulted in the inundation of numerous archeological sites, American Indian sacred sites, and towns, as well as transportation features, buildings, and structures associated with the construction of Hoover Dam, a National Landmark. Prolonged drought conditions are causing the lake to drop to its lowest level in decades. Many previously submerged cultural resources are now exposed; other resources that are still submerged are now in shallow water and more accessible to recreators. These cultural sites are non-renewable resources that are currently at risk of impacts. One such resource, a B-29 bomber, was vandalized by divers, forcing a temporary diving restriction in the area surrounding the aircraft. Other sites are at risk from improper mooring by visitors engaging in recreational activities. Ancient towns and other sites have become vulnerable to looting activities. Once these resources are destroyed, a part of our nation's heritage is lost forever. The goal of Lake Mead NRA is to preserve these important windows to the past while providing access and recreational opportunities through a comprehensive program of education and stewardship. A submerged cultural resources management plan will outline how to achieve that goal.

### Background

The proposed plan for the management of submerged cultural resources grew from a need to protect and manage an aircraft that sunk in Lake Mead over 50 years ago. B-29A (B-29), serial number 45-21847, assigned to Upper Air Research Project #288, ditched in the Overton Arm of Lake Mead on July 21, 1948. Since the time of the crash, numerous attempts to locate and claim salvage on the B-29 have been made. Search efforts were intermittent until the early 1990s when interest in B-29s grew and stories of the B-29 in Lake Mead spread, causing aircraft enthusiasts to file for permits to search and salvage the aircraft. By this time the aircraft had reached 50 years of age and was determined eligible to the National Register of Historic Places.

Questions arose as to whether the B-29 had been officially abandoned by the Federal government and whether an individual could declare salvage rights to the aircraft. The NPS at Lake Mead NRA was challenged on ownership, and salvage rights were filed in court on the B-29 in 1994. The case was "dismissed without prejudice" on a technicality, and the issues of ownership and salvage were never resolved.

The aircraft was located in 2000 by an individual who had been searching for the aircraft using side-scan sonar without a permit. The NPS was never notified of the find, and diving activities and removal of artifacts from the aircraft and crash site continued for a year until the park was notified by a media contact. The dive group refused to give the park the coordinates of the aircraft, so a diving restriction was issued for the area to prevent further vandalism. The NPS turned to the Bureau of Reclamation to reprocess bathymetric information, which finally allowed Lake Mead NRA staff to locate the aircraft. Systematic mapping and documentation of the aircraft and crash site was completed by the Submerged Resources Center of the NPS. Their work recorded evidence of impacts to the aircraft and crash site resulting from the uncontrolled diving activities.

The dive leader and his new partner, Historic[al] Aircraft Restoration Corporation (HARC, a group that had previously requested a permit for the search and salvage of the B-29), filed a salvage claim and requested a restraining order to prevent the NPS from doing any diving, research, or filming activities on the aircraft. The court denied the restraining order and filed a decision in favor of the Federal government, designating Lake Mead NRA as temporary legal custodian of the aircraft and all its appurtenances. All known artifacts that had been removed from the aircraft and crash site were arrested by the U.S. Marshals and turned over to Lake Mead NRA. On June 16, 2005 a judgment was filed by the court giving the NPS full custodianship of the aircraft. On August 16, 2005 an order was filed ruling the case closed and non-appealable.

The issues encountered in dealing with the B-29 led to the idea for developing a B-29 Management Plan. During this same time, the park was facing an increasing number of issues associated with the drought and declining lake level. Cultural resources that were once submerged were becoming exposed, and others were now sitting in relatively shallow water. Many submerged or once-submerged cultural resource sites have become popular recreational destination points, and some level of management is needed for all of them. As a result, the idea for a B-29 Management Plan quickly evolved into a Submerged Cultural Resources Management Plan.

Several sites of historical significance are known to occur below the high-water mark of Lake Mead. In addition to the B-29, there are the communities of St. Thomas and Rioville, Fort Callville, the Salt Mines, and numerous structures associated with the construction of Hoover Dam. Archaeological surveys conducted in the 1920s and 1930s identified numerous prehistoric sites that were eventually inundated by Lake Mead. There are likely many additional undocumented sites as well, which will be identified as the lake level continues to drop. Both historic and prehistoric archaeological sites also

exist in Lake Mohave, although those are more likely to remain hidden as Lake Mohave is not a storage reservoir and does not experience the wide fluctuations in elevation that Lake Mead does. For purposes of completeness and efficiency, the Submerged Cultural Resources Management Plan will include both Lake Mead and Lake Mohave, and it will provide guidelines for managing known cultural resources as well as any other resources that are discovered in the future.

## PROJECT AREA LOCATION

Lake Mead NRA is located in southeastern Nevada and northwestern Arizona (Figure 1). The park is approximately 1.5 million acres in size and includes both Lake Mead, formed by Hoover Dam, and Lake Mohave, formed by Davis Dam (Figure 2). The Submerged Cultural Resource Plan would apply to all cultural resources below the high-water marks of both Lake Mead and Lake Mohave.

## ENVIRONMENTAL ASSESSMENT

This EA analyzes two action alternatives and the no-action alternative and their impacts on the human and natural environment. It outlines project alternatives, describes existing conditions in the project area, and analyzes the effects of each project alternative on the environment. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1508.9) and NPS Director's Orders 12 (DO-12).

## RELATED LAWS, POLICIES, AND OTHER PLANNING AND DOCUMENTS

The NPS Organic Act directs the NPS to manage units "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner as will leave them unimpaired for the enjoyment of future generations." (16 U.S.C. § 1). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress." (16 U.S.C. § 1 a-1). The Organic Act prohibits actions that permanently impair park resources unless a law directly and specifically allows for the acts. An action constitutes an impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values" (*Management Policies* 1.4.3).

NPS *Management Policies* 2001 requires the analysis of potential effects of each alternative to determine if actions would impair park resources. To determine impairment, the NPS must evaluate "the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts."

(*Management Policies* 1.4.4). The NPS must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. However,

**Figure 1. Regional Map**
**Lake Mead National Recreation Area**

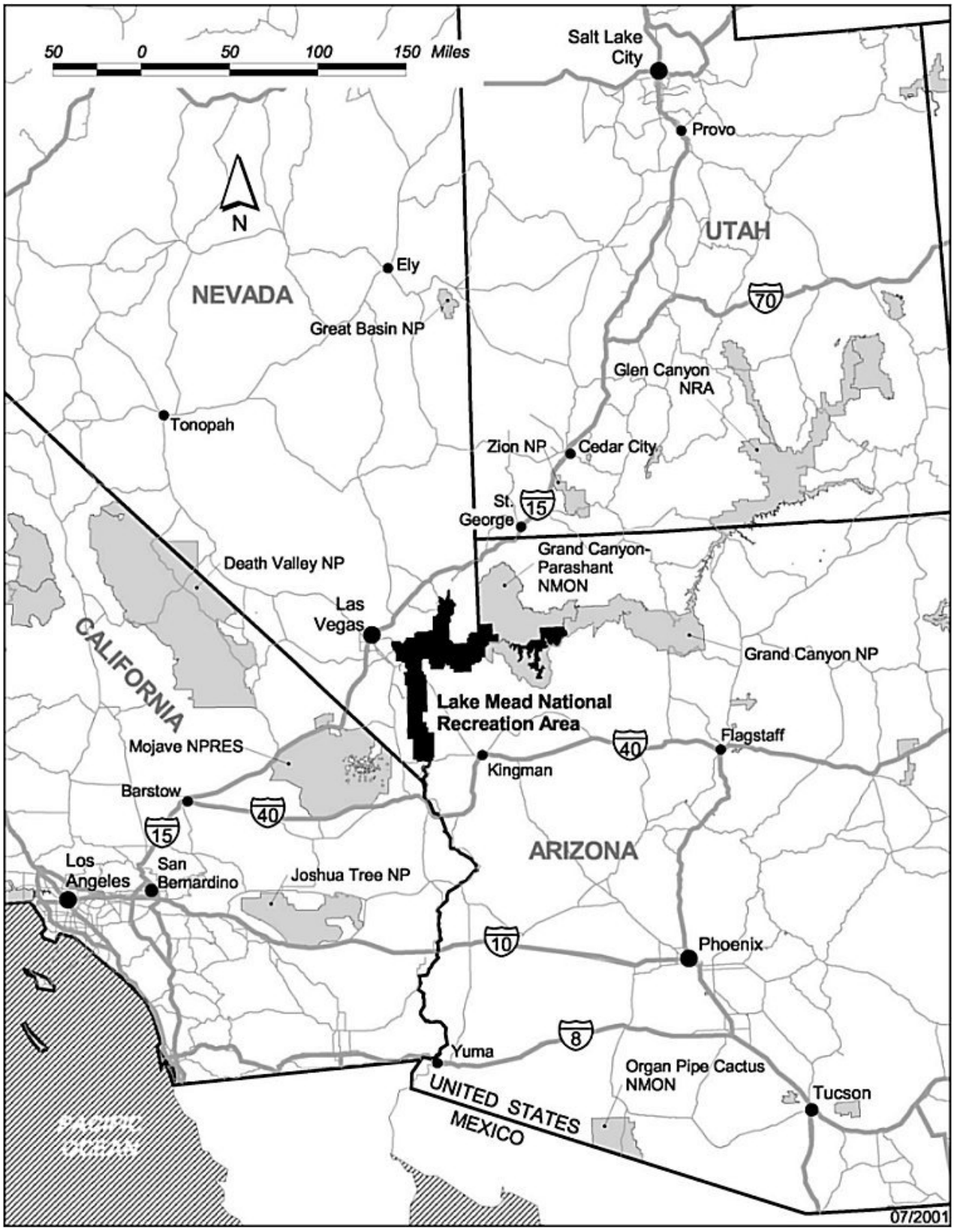
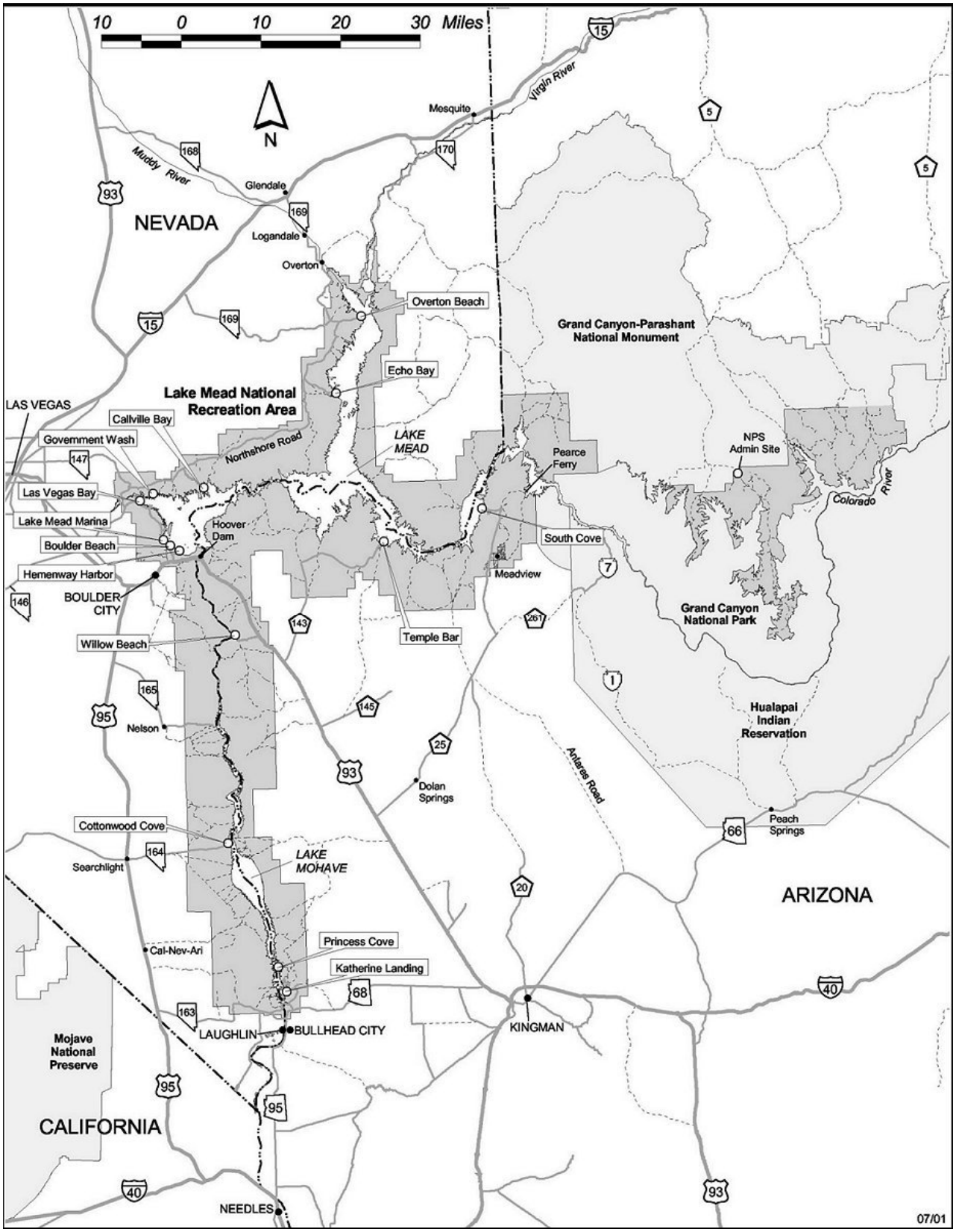


**Figure 2. Area Map**
**Lake Mead National Recreation Area**



the laws do give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment to the affected resources and values (Management Policies 1.4.3).

NPS units vary based on their enabling legislation, natural and cultural resources, missions, and the recreational opportunities appropriate for each unit, or for areas within each unit. The enabling legislation for Lake Mead NRA (PL 88-639), established the recreation area "for the general purposes of public recreation, benefit, and use, and in a manner that will preserve, develop and enhance, so far as practicable, the recreation potential, and in a manner that will preserve the scenic, historic, scientific, and other important features of the area, consistent with applicable reservations and limitations relating to such area and with other authorized uses of the lands and properties within such area." An action appropriate at Lake Mead NRA, as designated by the enabling legislation, may impair resources in another unit. This environmental assessment analyzes the context, duration, and intensity of impacts related to the implementation of a Submerged Cultural Resources Management Plan, as well as the potential for resource impairment, as required by Director's Order 12, *Conservation Planning, Environmental Impact Analysis and Decision Making.*

Cultural and archaeological resources are protected by a number of federal regulations, some of which are specific to submerged resources. These regulations, as they relate to the evaluation of impact topics, are addressed more fully in the Environmental Consequences section below.

## ISSUES AND IMPACT TOPICS

Issues are related to potential environmental effects of project alternatives and were identified by the project interdisciplinary team. Once issues were identified, they were used to help formulate the alternatives and mitigation measures. Impact topics based on substantive issues, environmental statutes, regulations, and executive orders (EOs) were selected for detailed analysis. A summary of the impact topics and rationale for their inclusion or dismissal is given below.

### Issues and Impact Topics Identified for Further Analysis

The following relevant impact topics are analyzed in the EA and include issues related both to no action and to taking action.

- Cultural Resources. Cultural and archeological resources could be impacted by visitors recreating on or near these sites.
- Park Operations. Depending on the alternative chosen, additional staff time may be needed for monitoring cultural resource sites and for patrolling and enforcing plan regulations.
- Visitor Use and Experience. Management activities may limit the amount or type of visitation particular areas receive and could influence visitor opportunity to see, learn about, and enjoy certain cultural resources.

- Socioeconomic Resources. Depending on the alternative chosen, the plan may affect commercial dive operations that depend on the lake and its resources for doing business.

**Impact Topics Considered but Dismissed from Further Consideration**

Several issues were considered during the planning process but were dismissed from further consideration because they were either determined insignificant or because there were no potential effects to these resources. Since the Submerged Cultural Resources Management Plan would not authorize any recreation not already permissible at Lake Mead NRA, and since implementation would not increase the level of activity in certain areas of the park, the Plan would have no effect on the following resources: soils and vegetation, wildlife and aquatic life, water resources, air quality, visual resources, and soundscapes.

The only special status species that occur in the project area are the federally endangered razorback sucker (*Xyrauchen texanus)* and bonytail chub (*Gila elegans*), and both Lake Mead and Lake Mohave are designated critical habitat. However, both the park's *Lake Management Plan* (2002) and the pending *General Management Plan Amendment* contain provisions for protecting these species and their habitat from recreational impacts. If recreational activity is identified as having adverse effects on the species, temporary closures of areas during critical periods in the life cycle are authorized. Such closures would be implemented regardless of the alternative chosen, and impacts to special status species are not further addressed in this document.

The following resources are not further addressed in this document because they do not occur in the project area: wild or scenic rivers, wetlands, designated coastal zones, designated or proposed wilderness, prime and unique agricultural lands, and sites on the US Department of the Interior's National Registry of Natural Landmarks. In addition, there are no potential conflicts between the project and land use plans, policies, or controls (including state, local, or Native American) for the project area. There would be no increase in energy use as a result of implementing any of the alternatives. The project area of effect is not populated and, per EO 12898 on Environmental Justice, there are no potential effects on minorities, Native Americans, women, or the civil liberties (associated with age, race, creed, color, national origin, or sex) of any American citizen. No disproportionate high or adverse effects to minority populations or low-income populations are expected to occur as a result of implementing any alternative.

## SECTION II: DESCRIPTION OF ALTERNATIVES

### Introduction

This section describes the alternatives considered, including the No Action Alternative. The alternatives described include mitigation measures and monitoring activities proposed to minimize or avoid environmental impacts. The alternatives do not address emergency situations resulting from sinking vessels; such events are outside the scope of this document and will be handled in accordance with all applicable regulations, policies, and guidelines for emergency responses. This section also includes a description of alternatives considered early in the process but later eliminated from further study; reasons for their dismissal are provided. The section concludes with a comparison of the alternatives considered.

### Alternative A- No Action, Unrestricted Access and Use

Under this alternative, all submerged cultural resources would be open to recreational activities. Protection of resources would be based on existing laws and regulations, but management actions would be reactive rather than proactive, occurring only when resource damage is discovered and documented. There would be no closures and no buoys or signing in areas where sensitive submerged cultural resources occur. There would be no law enforcement beyond what currently exists to protect resources in these areas. This option would allow unregulated access and use for any existing type of recreational activity and any recreational activity that may be developed in the future. Visitors would be free to access all resources and experience them through on-site exploration. Anchoring may occur within sites, and structures may be used for fishing, moorings, or staging underwater activities. Sites may be used to stash caches for endurance activities or orienteering. Resources would be accessible to the public at large through filming and relaying images to direct feeds through the media. There would be no requirement for tracking new discoveries, and sites may be used without first documenting important research data and gaining knowledge of the sites' purposes. Sites discovered in the future would be accessible to the public and open to recreational activities, regardless of their cultural value.

### Alternative B- Restriction Of Recreational Use and Access

All recreational activities on submerged cultural resources would be prohibited, except when directly supervised by an on-site National Park Service employee. No unsupervised recreational activities would be allowed in or around submerged cultural sites. Areas containing submerged cultural resources would be closed with signs or buoys. The presence of law enforcement would be increased in these areas, and visitors trespassing into closed areas would be ticketed. No existing or future types of recreation would be authorized on or near submerged cultural resources. This includes, but is not limited to, fishing, diving, anchoring, mooring, and cache-stashing. Visitors would not have the opportunity to visit and experience submerged resources or learn first hand about a submerged resources through on-site exploration. Public access to sites would be provided through video imagery via real-time research feeds to viewing systems in

strategic locations such as visitor centers, schools, and other appropriate venues. Sites discovered in the future would be subject to all of the above regulations, regardless of their degree of cultural significance.

**Alternative C- Managed Recreational Use and Access (Management Preferred Alternative)**

Under this alternative, access to and recreational use of cultural resource sites would be managed through a systematic program of research, evaluation, documentation, monitoring and stewardship. Submerged cultural resource management would be proactive, developing a system of public use that promotes monitoring, condition assessment, and stewardship by the users. Sites that are currently open to recreational activities will remain open; effects of these activities will be monitored and documented. Other sites will be open to activity by permit only. Permitting would occur on a case-by-case basis after a thorough evaluation to determine what types of activity are appropriate and how to best enforce permit conditions. If impacts to sites occur through recreational activities, the impact and activity will be evaluated, and a strategy will be developed to mitigate the impact. If impacts cannot be mitigated, closures may be necessary. Public access to sites and education would be provided through video imagery via real-time research feeds to viewing systems in strategic locations such as visitor centers, schools, and other appropriate venues. As new sites are discovered, they will be documented and evaluated for their National Register eligibility then opened to the type of recreational activities and/or permitting that would best meet the park's preservation goals.

Under this alternative, the method of management would depend on the results of a comprehensive evaluation, which would include several factors, including: whether the site was eligible for or listed on the National Register of Historic Places; the results of Native American consultations; the structural integrity of the site and whether or not it poses any risk to safety; the presence of hazardous materials; the suitability of the site (including its location) as habitat for sensitive or federally protected species; and any concerns for homeland security. Evaluations would also include an extensive inventory of all items present at the site, photo-documentation, and illustrations and maps of the site. Results of the evaluations would be used to determine whether signs, buoys, or other structural mitigation would be required to protect the site and/or the visitors.

Some sites may be open by permit only. Permits would be issued either through the Chief Ranger’s office as a Special Use Permit, or through the Concession’s Management Office as an Incidental Business Permit when commercially guided tours are to be offered. The need for permitting would be determined by the evaluations described above and would depend on a variety of factors including: the significance of the site; its susceptibility to violations of the Archeological Resources Protection Act and Native American Graves Protection and Repatriation Act; the sensitivity of the site (including whether human remains, government property, or hazardous materials are present); portability of the artifacts; and safety concerns.

Under this alternative, closures of some sites may be necessary. For newly discovered sites, locations may not be immediately disclosed to the public and temporary closures

may be necessary to conduct the evaluations described above, with permanent management of the sites being determined by the results of the evaluations. Temporary closures would also be necessary for the investigation of criminal activity or accidents that occur at a site. For burial sites or sites with human remains present, consultation with the tribes would be needed to determine how to protect the site and whether or not permanent closure would be necessary.

## MITIGATION AND MONITORING

Mitigation measures are specific actions designed to minimize, reduce, or eliminate impacts of alternatives and to protect Lake Mead NRA resources and visitors. Monitoring activities are actions to be conducted following plan implementation. The following mitigation measures related to recreation on or near cultural resource sites would be implemented under each alternative, and are assumed in the analysis of effects for each alternative.

- The National Park Service will consult with the Nevada State Historic Preservation Office (SHPO) to determine the significance of the archeological sites located in the project area and to develop a plan to mitigate any adverse effects caused by recreational activities.

- The National Park Service will consult with the appropriate Native American groups as required by the various laws, regulations, and executive orders.

- The National Park Service will, through outreach and interpretive programs, educate the public about the value of cultural resource sites and the need to protect them for future generations.

- Monitoring of known cultural resource sites will be used to document impacts and assess the need for additional protective measures.

## ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER EVALUATION

The salvage and removal of submerged cultural resources by private parties or independent contractors was dismissed as a viable alternative for several reasons. Such salvage operations would disrupt the aquatic environment and the species that inhabit it; substances or materials that could harm the environment may be exposed or released by salvage activities. The resources could sustain physical damage or lose their historic integrity during the salvage and removal process. Research potential is compromised by removing the objects from their historical setting. Removal of the resources would prevent visitors from learning about and enjoying the resource. Finally, some of the resources encompass large areas and have multiple large structures, and complete removal would not be possible.

## CONSULATION, COORDINATION, AND PERMIT REQUIREMENTS

Prior consultation and coordination efforts have contributed to the need for a Submerged Cultural Resource Plan. The recommendation to develop a strategy for addressing submerged resources has been put forth during past consultations with the tribes. The Nevada SHPO has consulted with the park on several submerged resources, has been notified of the proposed plan. All affected tribes, as well as the Nevada and Arizona SHPOs, will receive review copies of this EA. In addition, the EA will be released for a 30-day public review period.

## ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the alternative that will promote NEPA, as expressed in Section 101 of NEPA. This alternative will satisfy the following requirements:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable or unintended consequences;
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and,
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative C is the environmentally preferable alternative because it would best meet the requirements in Section 101 of NEPA. By managing the use of cultural resources, Alternative C will assure that these resources are protected now and for future generations. It also allows a wide range of beneficial uses, including public enjoyment of these resources. Alternative C is more beneficial than Alternative A, which may not preserve important historic, cultural, and natural aspects of our national heritage. Both Alternative B and Alternative C ensure protection of valuable cultural resources, but Alternative B does so through a more rigid system of restrictions, which denies access to sites and limits opportunities for current and future generations to learn about and enjoy aspects of their natural heritage. Alternative C provides a strategy for balancing resource

protection and resource use, and therefore allows for the widest range of beneficial uses of the environment.

**Comparison of Impacts**

Table 1 summarizes the potential long-term impacts of the proposed alternative. Short-term impacts are not included in this table, but are analyzed in the Environmental Consequences section. Impact intensity, context, and duration are also defined in the Environmental Consequences section.

**Table 1: Comparison of Long-Term Impacts from the Alternatives Considered**

| IMPACT TOPIC | ALTERNATIVE A (NO ACTION) | ALTERNATIVE B | ALTERNATIVE C (PREFERRED) |
|---|---|---|---|
| **Cultural Resources** | Potentially major adverse impacts | Beneficial effects | Beneficial effects |
| **Park Operations** | Minor impacts | Moderate adverse impacts | Negligible to minor adverse impacts |
| **Visitor Use and Experience** | Potentially major adverse impacts | Moderate adverse impacts | Beneficial effects |
| **Socioeconomic Resources** | No impacts | Minor adverse impacts | Potentially beneficial effects |

## SECTION III: AFFECTED ENVIRONMENT

### INTRODUCTION

This section provides a description of the existing environment in the project area and the resources that may be affected by the proposals and alternatives under consideration. Complete and detailed descriptions of the environment and existing use at Lake Mead NRA are found in the *Lake Mead NRA Lake Management Plan and Final Environmental Impact Statement* (2002), *Lake Mead NRA Resource Management Plan* (NPS 2000) and the *Lake Mead NRA General Management Plan* (NPS 1986).

### LOCATION AND GENERAL DESCRIPTION OF LAKE MEAD NRA AND THE PROJECT AREA

Lake Mead was designated as the first National Recreation Area in 1964. Lake Mead is located in southern Nevada and northwestern Arizona, about 20 miles southeast of Las Vegas, Nevada, and about 5 miles north of Bullhead City, Arizona, and Laughlin, Nevada (Figures 1 and 2). It consists of two large reservoirs (Lakes Mead and Mohave) formed by the impoundment of the Colorado River. The recreation area is approximately 1.5 million acres in size, with about 87% of that acreage being terrestrial resources. Approximately 60% of the total acreage is within the state of Arizona, in Mohave County, and 40% of the total acreage is in the state of Nevada, in Clark County.

Users of Lake Mead NRA include boaters, swimmers, fishermen, canoeists, kayakers, hikers, photographers, roadside sightseers, backpackers, campers, and bicyclists. Recreation visits in 2003 totaled just over 8 million. The majority of park visitation occurs during the summer months and involves water-based recreation. However, visitation is increasing in the spring and fall as visitors discover the backcountry regions of the recreation area through hiking and travel on the approved road system.

#### Soils and Vegetation

Soils near the shoreline of Lake Mead and Lake Mohave have been impacted by years of wave action and rising and falling water levels. In some areas, soil has been eroded away, leaving rock. In other areas, layers of mud and silt have built up. Aquatic vegetation occurs in shallow areas penetrable by light. Common native species include spiny naiad (*Naja marina*), fennel leaf pondweed (*Potamogeton pectinatus*), common waterweed (*Elodea canadensis*), and horned pondweed (*Zannichellia palustris*). Above the water, shorelines are usually dominated by saltcedar (*Tamarix ramossissima*), but natives such as cottonwood (*Populus fremontii*), willow (*Salix goodfingii*), and arrowweed (*Pluchea sericea*) may also be present.

#### Wildlife

Lake Mead and Lake Mohave provide habitat for numerous fish species, many of which have been stocked as sport fish. Common fish species include striped bass, largemouth bass, black crappie, green sunfish, bluegill, channel catfish, rainbow trout, threadfin shad,

and carp. Many types of waterfowl use the lake, including ducks, grebes, and coots. Small mammals, birds, coyotes, and various reptiles can be observed at or near the shoreline.

**Special Status Species**
The razorback sucker (*Xyrauchen texanus*) and the bonytail chub (*Gila elegans*) are both native to the Colorado River system and are currently listed as federally endangered. The main reason for the decline of both species is the damming of the Colorado River and the introduction of non-native fishes. The non-native fishes prey on young razorbacks and bonytails to an extent that prevents significant recruitment into the population**.**

**Water Resources**
Lake Mead and Lake Mohave are the primary water resources in the region and are fed by the Colorado River and, to a much lesser extent, the Muddy and Virgin Rivers. The water level of Lake Mead is a function of how much water is received from the upper Colorado River basin, which varies considerably depending on weather conditions. Drought conditions in the west and lower than normal snow pack in the Rocky Mountains for the last several years have caused Lake Mead to drop significantly. As of June 2005, the elevation of Lake Mead was 1,140 feet, and current predictions indicate an elevation of 1,121 feet by September of 2006.

**Air Quality**
Lake Mead has been designated as a Class II air quality area under the Clean Air Act. Air quality is generally good in the recreation area. Most reductions in air quality are due to air flows from the Las Vegas Valley west of Lake Mead NRA.

**Soundscapes**
Noise-sensitive receptors are those locations where activities occur that could be affected by increased noise levels and include such areas as residences, motels, churches, schools, parks, and libraries. Existing noise levels are determined for the outdoor living area at sensitive receptors. There are no sensitive receptors in the project area. The dominant noise sources in the project area are boat traffic and, on shore, boat and automobile traffic associated with marina activities.

**Cultural Resources**

<u>Historic Overview: Prehistory</u>
Archeologists have identified a series of Native American cultures that have occupied Lake Mead NRA and adjacent areas in southern Nevada and Western Arizona over the last 12,000 to 13,000 years. These cultures have been divided into discrete time periods based on various criteria, i.e. changes in technology, the types of animal and plant foods used, or the migration of peoples into and out of the area.

Occupation of the area began at the end of the late Pleistocene around 12,000 to 13,000 years ago with the Paleoindian period. The Paleoindian period lasted into the Holocene and ended around 7,000 before present (BP). The Pleistocene was dominated by greater

rainfall and moderate temperatures, which created an environment of vast lakes and humid conditions. During the Paleoindian period of the early Holocene, the environment was characterized by a general trend to warmer and dryer conditions. Paleoindian peoples lived in small, highly nomadic groups, utilized wild plant foods, and hunted now extinct big game. Physical remains from the Paleoindian period usually consist of flaked stone tools and the by-products of tool manufacture, e.g. flakes and spent cores.

The Archaic period (7,000 to 2,000 BP) is characterized by nomadic peoples living in small groups adapted to the mosaic of microenvironments created by the overall warmer and dryer conditions. Their subsistence was based on gathering wild plant foods and hunting small game. Flaked stone tools and the by-products of tool manufacture, along with the common occurrence of ground stone artifacts, typify the Archaic period.

The arrival of Anasazi peoples from the east marked the end of the Archaic period and the beginning of the Saratoga Springs period. The Saratoga Springs period (2,000 to 750 BP) was dominated by the expansion of the Virgin Anasazi into the Lake Mead area, and their eventual withdrawal. The Virgin Anasazi were Puebloan peoples who used pottery and lived in permanent structures. The practiced some horticulture but still depended heavily on wild plant and animal foods.

The Late Prehistoric lifeway, which began around 750 BP, was similar to Archaic adaptations. The people lived in small mobile groups, gathered wild plant foods, and hunted small game. They also practiced small scale horticulture. Archeologically, these people are indistinguishable from the Mojave, Quechan, Hualapai, and Havasupai (Yuman-speaking peoples) and the Southern Paiute (Numic-speaking peoples) who occupied the area during the Historic period.

Euro-American History

The Spanish and later the Mexicans were the first whites to explore the area. During the Spanish/Mexican period (1500s to 1840s) trade routes were established between the population centers in New Mexico and the colonies in California. These trade routes included the Mojave Trail and the Old Spanish Trail, which passed through Southern Nevada.

The Mormons were the first to establish permanent white settlements in Southern Nevada. These included Las Vegas, St. Thomas, and Callville, the latter two of which were inundated by Lake Mead. During the late 1800s and early 1900s, the prosperity of these communities and others in the area was determined by the boom and bust cycles of the mining and ranching industries that formed the economic base of the area.

The construction of Hoover Dam in the 1930s dramatically changed the landscape of southern Nevada and Western Arizona. It brought thousands of people to the area, put Las Vegas on the map, and helped develop the area's current economy based on recreation and tourism. Completion of the dam submerged the towns of St. Thomas, Rioville, and Callville and Bonnelli Ferry, historically significant for their association with Mormon settlement and the transportation of people and goods up and down the

Colorado River. There are numerous culturally significant structures associated with the construction of the dam including a construction camp, water clarifier, aggregate plant, roads, and portions of the U.S. Government and Six Companies railroad grades. A wrecked B-29 bomber is historically significant for its contribution to the Upper Atmospheric Testing Program during the Cold War. The Salt Mines were used by the Paiute peoples of the area to harvest salt and is culturally significant as a traditional gathering site. There are likely many additional undocumented prehistoric and historic sites as well, which will be identified as submerged areas are surveyed and the lake level continues to drop. Prehistoric and historic sites also exist in Lake Mohave, created by the completion of Davis Dam in 1950. Evidence of early mining activities is represented by a stamp mill below Eldorado Canyon and structures associated with the Katherine Mine and Mill site. The now submerged Cottonwood Island was sacred to the Native American tribes along the Colorado River and has remnants of an early military fort built on it.

**Park Operations, Visitor Use and Experience, and Socioeconomic Resources**
Tourism is an important component of the region surrounding Lake Mead NRA. While Las Vegas tourism revolves around the gaming industry, Lake Mead NRA provides valuable recreational opportunities to people who enjoy boating, fishing, sightseeing, and other activities. The recreation area also contributes to the local economy, with millions of dollars spent on the sale and rental of boats and other water-related equipment, and other recreational equipment and services.

## SECTION IV: ENVIRONMENTAL CONSEQUENCES

### INTRODUCTION

This section presents the likely beneficial and adverse effects to the natural and human environment that would result from implementing the alternatives under consideration. This section describes short-term and long-term effects, direct and indirect effects, cumulative effects, and the potential for each alternative to impair park resources. Interpretation of impacts in terms of their duration, intensity (or magnitude), and context (local, regional, or national effects) are provided where possible. Due to the programmatic nature of the environmental assessment, the analysis of impacts is general in nature, and individual actions carried forth under this plan may require additional environmental compliance or public involvement at a later time.

### METHODOLOGY

This section contains the environmental impacts, including direct and indirect effects and their significance to the alternatives. It also assumes that the mitigation identified in the *Mitigation and Monitoring* section of this EA would be implemented under any of the applicable alternatives, as identified in each mitigation criteria.

Impact analyses and conclusions are based on NPS staff knowledge of resources and the project area, review of existing literature, and information provided by experts in the NPS or other agencies. Any impacts described in this section are based on preliminary design of the alternatives under consideration. Effects are quantified where possible; in the absence of quantitative data, best professional judgment prevailed.

### CRITERIA AND THRESHOLDS FOR IMPACT ANALYSES

The following are laws, regulations, and/ or guidance that relates to the evaluation of each impact topic.

#### Cultural Resources

Laws, Regulations, and Policies: Numerous legislative acts, regulations, and NPS policies provide direction for the protection, preservation, and management of cultural resources on public lands. Further, these laws and policies establish what must be considered in general management planning and how cultural resources must be managed in future undertakings resulting from the approved plan regardless of the final alternative chosen. Applicable laws and regulations include the NPS Organic Act of 1916; the Antiquities Act of 1906; the National Historic Preservation Act of 1966 (1992, as amended); the National Environmental Policy Act of 1969; the National Parks and Recreation Act of 1978; the Archeological Resources Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; the American Indian Religious Freedom Act of 1996; Executive Order 13007 (1996); the Historic Sites, Buildings and Antiquities Act of 1935; the Abandoned Shipwreck Act of 1987; the Reservoir Salvage Act of 1960; the

Curation of Federally Owned and Administered Archeological Collections (1991) and the Sunken Military Craft Act of 2004.

Applicable agency policies relevant to cultural resources include Chapter 5 of NPS *Management Policies*, and the *Cultural Resource Management Guideline (DO-28)*, as well as other related policy directives such as the NPS *Museum Handbook*, the NPS *Manual for Museums*, and *Interpretation and Visitor Services Guidelines (NPS-26).*

The NPS Organic Act (16 USC 1-4) established the agency to manage the parks and monuments with the purpose of conserving historic objects within them and providing for their enjoyment.

The Antiquities Act of 1906 (P.L. 209) authorized the president to establish historic landmarks and structures as monuments owned or controlled by the U.S. government and instituted a fine for unauthorized collection of their artifacts.

The National Historic Preservation Act of 1966 (NHPA; 16 USC 470, et seq.) requires in section 106 that federal agencies with direct or indirect jurisdiction over undertakings take into account the effect of those undertakings on properties that are listed on, or eligible for listing on, the National Register of Historic Places. Section 110 of the act further requires federal land managers to establish programs in consultation with the state historic preservation office to identify, evaluate, and nominate properties to the national register. This act applies to all federal undertakings or projects requiring federal funds or permits.

The National Environmental Policy Act of 1969 (NEPA; P.L. 91-190) sets forth federal policy to preserve important historic, cultural, and natural aspects of our national heritage and accomplishes this by assisting federal managers in making sound decisions based on an objective understanding of the potential environmental consequences of proposed management alternatives. This act applies to any federal project or other project requiring federal funding or licensing. This act requires federal agencies to use a systematic, interdisciplinary approach integrating natural and social sciences to identify and objectively evaluate all reasonable alternatives to a proposed action.

The National Parks and Recreation Act of 1978 (P.L. 95-625) requires that general management plans be developed for each unit in the national park system and that they include, among other things, measures for the preservation for the area's resources and an indication of the types and intensities of development associated with public use of a given unit.

The Archeological Resources Protection Act of 1979 (16 USC 470aa-mm) further codifies the federal government's efforts to protect and preserve archeological resources on public lands by stiffening criminal penalties, as well as instituting civil penalties, for the unauthorized collection of artifacts. Additionally, it establishes a permit system for the excavation and removal of artifacts from public lands, including their final

disposition, as well as confidentiality provisions for sensitive site location information where the release of such information may endanger the resource.

The Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001) sets forth procedures for determining the final disposition of any human remains, funerary objects, or objects of cultural patrimony that are discovered on public lands or during the course of a federal undertaking.

The American Indian Religious Freedom Act (42 USC 1996---1996a; PL 95-341, 103-344) declared "the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express and exercise the traditional religions of the American Indian, … including, but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites."

Executive Order 13007 (Indian Sacred Sites) May 24, 1996, 61 FR 26771 [42 USC 1996 note] instructs all federal land management agencies, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites.

The Historic Sites, Buildings and Antiquities Act (16 USC 461---467; Aug. 21, 1935, P.L. 74-292, 49 Stat. 666) declared "a national policy to preserve for public use historic sites, builds, and objects…"; authorized the programs known as the Historic American Buildings Survey, the Historic American Engineering Record, the National Historic Landmarks Survey: authorized the NPS to "restore, reconstruct, rehabilitate, preserve, and maintain historic and prehistoric sites, buildings, objects, and properties of national historical or archaeological significance and…establish and maintain museums in connection therewith"; authorized cooperative agreements with other parties to preserve and manage historic properties.

The Abandoned Shipwreck Act of 1987 (43 USC 2101-2106; PL 100-298) asserts U.S. Government title to three categories of abandoned shipwrecks: those embedded in a state's submerged lands; those embedded in coralline formations protected by a state on its submerged lands; and those located on a state's lands that are included or determined eligible for inclusion in the National Register of Historic Places. The law then transfers title for a majority of those shipwrecks to the respective states, and provides that states develop policies for management of the wrecks so as to protect natural resources, permit reasonable public access, and allow for recovery of shipwrecks consistent with the protection of historical values and environmental integrity of wrecks and sites.

The Reservoir Salvage Act (16 USC 469---469c-2; PL 86-523, 93-291) and implementing regulations in 36 CFR Part 79 provides for the recovery and preservation of "historical and archeological data (including relics and specimens)" that might be lost or destroyed in the construction of dams and reservoirs.

"The Curation of Federally Owned and Administered Archeological Collections" (36 CFR 79) establishes guidelines and procedures for the proper curation and management of archeological collections owned or administered by federal agencies.

The Sunken Military Craft Act (P.L. 108-375) provides the United States with the authority for protecting and preserving sunken warships, naval auxiliaries, other vessels owned or operated by a government on military noncommercial service when it sank, military aircraft or military spacecraft that was owned or operated by a government when it sank and the associated contents of such craft and confirms that sunken U.S. military vessels and aircraft are the sovereign property of the United States regardless of the passage of time and provides for archeological research permits and civil enforcement measures (including substantial fines) to prevent unauthorized disturbance. It also makes the law of salvage not apply to sunken military craft without the express permission of the sovereign (U.S. of foreign flag).

Impact Indicators, Criteria, and Methodology: Impacts on cultural resources were developed based on existing conditions, current regulations, and likely development trends. The inventory of archaeological resources in the park is largely incomplete. For purposes of assessing impacts, all unrecorded resources are considered potentially eligible for listing on the National Register of Historic Places.

The park's inventory of standing structures and cultural landscapes is relatively complete, but many structures and landscapes still require evaluation to determine their eligibility for listing on the National Register of Historic Places. For purposes of assessing potential impacts to these properties, unevaluated structures and landscapes are assumed to be potentially eligible.

Under Section 106 of the National Historic Preservation Act (NHPA), only historic resources that are eligible or are listed on the National Register of Historic Places are considered for impacts. An impact to a property occurs if a proposed action would alter in any way the characteristic that qualifies it for inclusion on the register.

Under the Advisory Council's regulations, a determination of either *adverse effect* or *no adverse effect* must also be made for affected cultural resources eligible for the National Register. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualify it for inclusion in the National Register, e.g. diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the preferred alternative that would occur later in time, be farther removed in distance or be cumulative (36 CFR Part 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register.

For the purposes of this document, the level of impacts to cultural resources was accomplished using the following criteria:

- *Negligible impacts*: No potentially eligible or listed properties are present; no direct or indirect impacts. For purposes of Section 106, the determination would be *no effect*.

- *Minor impacts*: Potentially eligible or listed properties are present; no direct impacts, i.e. no impacts that diminish the integrity of the property, or impacts with only temporary effects are expected. For purposes of Section 106, the determination would be *no adverse effect*.

- *Moderate impacts*: Potentially eligible or listed properties are present; indirect impacts may occur or, in the case of structures, activity is limited to rehabilitation conducted in a manner that preserves the historical and architectural value of the property. For purposes of Section 106, the determination would be *no adverse effect*.

- *Major impacts*: Potentially eligible or listed properties present; direct impacts including physical destruction, damage, or alteration of all or part of a property. Isolation of a property from or alteration of the character of a property's setting when that character contributes to its eligibility, including removal from its historic location. Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting. Neglect of a property resulting in its deterioration or destruction (36 CFR 800.5). For purposes of Section 106, the determination would be *adverse effect.*

- *Impairment*: Loss, destruction, or degradation of a cultural property, resource, or value to the point that it negatively affects the park's purpose and visitor experience. For purposes of Section 106, the determination would be *adverse effect*.

In the absence of quantitative data concerning the full extent of actions under a proposed alternative, best professional judgment prevailed.

**Criteria and Thresholds for Impact Analyses of all Other Issues**

Impacts to park operations, visitor use and experience, and socioeconomic resources were analyzed using the best available information and best professional judgment of park staff. In this analysis, environmental impact is defined as a change that will alter the quality of the human environment, an object protected by law, or an object of high public concern.

Terms referring to impact intensity, context, and duration are used in the effects analysis. Unless otherwise stated, the standard definitions for these terms are as follows:

- *Negligible impacts*: The impact is at the lower level of detection; there would be no measurable change.

- *Minor impacts*: The impact is slight but detectable; there would be a small change.

- *Moderate impacts*: The impact is readily apparent; there would be a measurable change that could result in a small but permanent change.

- *Major impacts*: The impact is severe; there would be a highly noticeable, permanent measurable change.

- *Localized Impact*: The impact occurs in a specific site or area. When comparing changes to existing conditions, the impacts are detectable only in the localized area.

- *Direct Effects*: caused by the action and occur at the same time and place

- *Indirect Effects*: caused by the action but are later in time or farther removed in distance, but are still reasonably foreseeable

- *Short-Term Effect*: The effect occurs only during or immediately after implementation of the alternative.

- *Long-Term Effect*: The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more and could be beneficial or adverse.

**Impairment Analysis**

In addition to determining the environmental consequences of the alternatives, NPS Management Policies (2001) requires the analysis of potential effects to determine if actions would impair park resources. Under the NPS Organic Act and the General Authorities Act, as amended, the NPS may not allow the impairment of park resources and values except as authorized specifically by Congress. The NPS must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment to the affected resources and values (Management Policies 1.4.3).

Impairment to park resources and values has been analyzed within this document. Impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the enabling legislation or proclamation of the park; is the key to the cultural

or natural integrity of the park or to opportunities for enjoyment of the park; or is identified as a goal in the park's general management plan or other relevant NPS planning document. An impact would be less likely to constitute an impairment to the extent that it is an unavoidable result, which cannot be reasonably further mitigated, of an action necessary to preserve or restore the integrity of park resources or values.

**Cumulative Effects**

Cumulative effects are the direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action (40 CFR Part 1508.7). Guidance for implementing NEPA (Public Law 91-190, 1970) requires that federal agencies identify the temporal and geographic boundaries within which they will evaluate potential cumulative effects of an action and the specific past, present, and reasonably foreseeable projects that will be analyzed. This includes potential actions within and outside the recreation area boundary. The geographical boundaries of analysis vary depending on the impact topic and potential effects. While this information may be inexact at this time, major sources of impacts have been assessed as accurately and completely as possible, using all available data.

Specific projects or ongoing activities with the potential to cumulatively affect the resources (impact topics) evaluated for the project are identified in this document and described in the following narrative. Some impact topics would be affected by several or all of the described activities, while others could be affected very little or not at all. How each alternative would incrementally contribute to potential impacts for a resource is included in the cumulative effects discussion for each impact topic.

**ALTERNATIVE A- No Action, Unrestricted Access and Use**

**Cultural Resources**

With no restriction on access or use, cultural resources would be vulnerable to damage and destruction, either intentional or unintentional, or removal (i.e. theft). Any visitor able to access the resources would be able to do so without the park's knowledge. Repeated on-site exploration by visitors could result in more rapid deterioration of the resources, depending on their nature. There would be little or no deterrence to ill-meaning visitors intending to vandalize or loot areas containing valuable cultural resources. Cultural resources could be indirectly damaged by recreational activities occurring in their vicinity. Knowledge of the existence of sensitive resources and their locations could be spread to the public at large without input from the park, leading to greater likelihood of the problems described above.

*Cumulative Effects*: Cultural resources at Lake Mead NRA, especially those that are easily accessible, are subject to damage from visitors, whether it is simple overuse by otherwise well-meaning visitors, or deliberate impacts in the form of looting, destruction, or graffiti. Increased visitation, lower water levels, and the popularity of diving may

make submerged resources more vulnerable to these types of impacts. In addition, the aquatic environment in which these resources exist can accelerate natural deterioration processes.

*Conclusion*: Although the magnitude of loss or damage cannot be predicted, this alternative could have potentially major adverse effects on cultural resources. Impairment of cultural resources is not anticipated.

**Park Operations**

If access to submerged cultural resources was unrestricted, maintenance staff would not be required to install or maintain signs or buoys closing off the areas. Law enforcement personnel would not have to spend time patrolling the areas and enforcing the closures, but they would continue to respond to any reports of illegal activity involving cultural resources. If damage to cultural resources as a result of unrestricted access occurred, the park's cultural resource specialists would need to record and document the damage.

*Cumulative Effects*: A higher incidence of damage to cultural resources would increase the workload of the cultural resource staff. Placing additional responsibilities on existing park staff takes time away from other projects and can result in delayed responses to any issues that may arise.

*Conclusion*: Under this alternative, impacts to park operations would be minor.

**Visitor Use and Experience**

Under this alternative, visitors would have unrestricted access to cultural resources located below high-water. While on-site exploration can provide both enjoyment and education, such opportunities could be reduced over the long term as resources are damaged or looted. If resources are not fully protected, the ability of visitors to enjoy and learn from them would be compromised.

*Cumulative Effects*: Other cultural resources in the park have already been removed or harmed, compromising visitor enjoyment. Additional damage to cultural resources that may occur under this alternative would add to these impacts.

*Conclusion*: Over time, loss of resources could lead to long-term potentially major adverse effects to visitor experience.

**Socioeconomic Resources**

Under this alternative, local dive groups would continue to operate as they have in the past, and there would be no impact to socioeconomic resources.

*Cumulative Effects*: There are no cumulative effects to socioeconomic resources under this alternative.

*Conclusion*: This alternative would have no impacts to socioeconomic resources.

**ALTERNATIVE B- Restriction Of Recreational Use and Access**

**Cultural Resources**

Restriction of access to cultural resources would help ensure that they are not looted, vandalized, or subject to increased deterioration as a result of recreational use. Deterioration of sites would occur only through the natural passage of time, with minimal effects of human activities. Although enforcement of area closures can never be 100% effective, this alternative offers the most protection to the resources.

*Cumulative Effects*: There are no cumulative effects to cultural resources under this alternative.

*Conclusion*: Restricting access to areas containing submerged cultural resources would have beneficial effects to the resources. There would be no impairment of cultural resources.

**Park Operations**

Under this alternative, personnel would be required to implement closures around sensitive submerged cultural resource sites. This would involve the placement of buoys and/or signs, depending on whether the resource was underwater or partially or completely above the surface. Buoys and signs would have to be maintained and replaced on an as-needed basis. In addition, law enforcement personnel would need to increase patrols in these areas in order to ensure compliance with the closures and to ticket any violators.

*Cumulative Effects*: Maintenance and law enforcement staff would be needed to make restrictions and closures effective. Placing additional responsibilities on existing park staff takes time away from other projects and can result in delayed responses to other needs of the park.

*Conclusion*: This alternative would have moderate adverse effects to park operations.

**Visitor Use and Experience**

The park's submerged cultural resources have a rich and varied cultural history and provide opportunities for both enjoyment and education. Restriction of access to these resources, other than through video imagery or NPS-supervised site visits, would deny these opportunities to park visitors and would be inconsistent with the park's mission to preserve resources for the enjoyment of present and future generations.

*Cumulative Effects*: There are no cumulative effects to visitor use and experience associated with this alternative.

*Conclusion*: This alternative would have moderate adverse effects to visitor use and experience.

**Socioeconomic Resources**

Under this alternative, visitation to submerged cultural resource sites would require accompaniment of a National Park Service employee, so local dive shops would not be able to bring visitors into the park for recreational dives in these areas. This alternative restricts the ways in which the dive shops may conduct business in Lake Mead NRA and thus could adversely impact socioeconomic resources. However, there are many types of recreation and business opportunities in the park that would remain unaffected by this alternative, so the total effect would not be great.

*Cumulative Effects*: Visitation to Lake Mead contributes significantly to the economy of southern Nevada, and anything that results in reduced visitation can negatively impact the economy. Although theories are speculative, it is presumed that installation of fee stations, the terrorist events of September 11, and the drought-induced reduction in lake levels have all contributed to a reduction in visitation from the record levels seen in the mid-nineties. Fewer people recreating in the park reduces Lake Mead's contribution to the local economy.

*Conclusion*: This alternative would have minor adverse impacts to socioeconomic resources.

**ALTERNATIVE C- Managed Recreational Use and Access**

**Cultural Resources**

By managing access to, and recreational use of, submerged cultural resources through the implementation of a submerged cultural resource plan, the park can balance the need to protect the resources with the opportunity for visitors to enjoy them. Rather than implement a blanket policy that treats all resources the same, the park can determine the level of use that is appropriate for individual resources and then implement a policy that protects them from damage from excessive use or intentional destruction. Sites that are only open to permitted dive outfitters would benefit from the increased level of monitoring that professional divers could provide to the park.

*Cumulative Effects*: There are no cumulative effects to cultural resources under this alternative.

*Conclusion*: This alternative allows the park to manage access and recreational use in a way that minimizes impacts to cultural resources and thus has beneficial effects for the resources. There would be no impairment of cultural resources.

**Park Operations**

Under this alternative, the park would use a systematic program of research, evaluation, documentation, monitoring, and stewardship to manage access and use of submerged cultural resources. Permits for access and use would be authorized on a case-by-case basis. Cultural resource specialists would be responsible for monitoring use, developing strategies for mitigating impacts and, when impacts cannot be mitigated, implementing closures. Administrative time would be needed to issue permits, and law enforcement personnel would be responsible for enforcing permit conditions. However, many of the tasks that would be required under this alternative are already performed by park staff for a variety of other projects. In addition, many of the monitoring and stewardship duties would be assumed by permitted visitors to the sites, alleviating some of the workload of park staff.

*Cumulative Effects*: Placing additional responsibilities on existing park staff takes time away from other projects and can result in delayed responses to other needs of the park.

*Conclusions*: This alternative would have negligible to minor impacts to park operations.

**Visitor Use and Experience**

Under this alternative, visitors could enjoy cultural resources at all sites where visitation is appropriate, provided that they comply with the regulations of the submerged resources management plan. Sites requiring closure could still be enjoyed through video imagery and real-time research feeds. Since cultural resources would not be subject to damage as they would under an unrestricted access alternative, the experience would be available to future generations as well.

*Cumulative Effects*: There are no cumulative effects to visitor use and experience under this alternative.

*Conclusions*: This alternative would have beneficial effects to visitor use and experience.

**Socioeconomic Resources**

Under this alternative, local dive groups could apply for permits to bring visitors to submerged cultural resource sites. Sensitive sites would be accessible only through commercial operations regulated by the National Park Service, creating a new business opportunity for dive shops.

*Cumulative Effects*: Lake Mead NRA benefits the local economy by providing opportunities for boating, fishing, and other water-based activities, which in turn creates a need for consumer goods and services both in and outside the park. The diving opportunities provided under this plan would further contribute to this economic base.

*Conclusion*: This alternative would have beneficial effects to socioeconomic resources.

## SECTION V: COORDINATION AND CONSULTATION

Close consultation and coordination has been conducted with cultural resource personnel in the Pacific West Regional Office, the NPS Solicitors Office, Nez Perce National Park and the NPS Submerged Resource Center (SRC), the US Department of Justice, West Coast Branch, Admiralty, and Las Vegas Office, and the US Marshals Service. Those individuals are:

NPS, Pacific West Regional Office
- Stephanie Toothman – PWR Cultural Resource Lead
- Roger Kelly – Senior Archeologist (Oakland Office)
- Jim Thomson – Senior Archeologist (Seattle Office)
- Gordon Chappell – Senior Historian (Oakland Office)
- Bill Silvers – NPS Solicitor (Oakland Office)

Nez Perce National Historic Park
- Bob Chenoweth, Museum Curator/Aviation Historian

NPS, Submerged Resource Center, Santa Fe, New Mexico
- Larry Murphy, Chief SRC
- Dave Conlin, Archeologist
- Matt Russell, Archeologist
- Jim Bradford, Archeologist
- Brett Seymour, Photographer/Cinematographer
- Dan Lenihan, Chief SRC, retired

US Department of Justice
- Philip A. Berns, AUSA, West Coast Branch, Admiralty (San Francisco Office)
- Daniel Hollingsworth, AUSA (Las Vegas Office)

US Marshals Service, Las Vegas Office
- Rudolph Lara, Deputy U.S. Marshal

National Historic Preservation Act and jurisdictional issues were coordinated with the Nevada State Historic Preservation Office. Those individuals are:
- Ronald James, State Historic Preservation Officer
- Alice Baldrica, Deputy State Historic Preservation Officer

Access, management and diving issues are being coordinated with the Southern Nevada SCUBA Retailers Association and New Millenium Dive Expeditions. Those individuals are:
- Jay Gundy – Colorado River Divers
- Archie Haugen – Desert Divers
- Martin McClellan – New Millennium Dive Expeditions

Special consultation was conducted with John Simeroth, Scientist and Survivor of the B-29 crash. Lake Mead NRA personnel involved in the consultation and coordination process include:
- William Dickinson, Superintendent

Gary Warshefski, Deputy Superintendent
Rosie Pepito, Cultural Resource Manager
Kevin Hendricks, Assistant Chief Ranger (former)
Jim Koza, Chief Aids to Navigation (former)
Marc Burt, Canyon District Ranger
Steve Daron, Park Archeologist
Kent Turner, Chief of Resource Management
Dale Antonich, Chief Ranger
Mark Sappington, GIS Specialist
Beth Shott, Special Agent (former)
Scott Hinson, Special Agent in Charge
Paul Crawford, Special Agent

In addition, a special scoping session for management of the B-29 was conducted on May 10, 2005. Participants included National Park Service personnel and members of the local dive community, including the Nevada SCUBA Retailers Association. Items of discussion included diver safety and means for ensuring the protection of the aircraft.

A 30-day public scoping period occurred between June 21, 2004 and July 21, 2004 through a press release (Appendix A). No comments were received. The scoping press release was sent to television stations, newspapers, magazines, and radio stations in Las Vegas, Henderson, Boulder City, Pahrump, Overton, Logandale, Laughlin, Nevada; Meadview, Kingman, Phoenix, and Bullhead City, Arizona; and Needles, and Los Angeles, CA. The press release was also posted on the park website. Government entities receiving notification of the project included the Bureau of Land Management, Bureau of Reclamation, the Southern Nevada Water Authority, the Nevada Division of Wildlife, Arizona Game and Fish Department, the Nevada Department of Transportation, and local government offices in gateway communities. Other stakeholders, including other NPS units, concessioners, and the congressional delegation of Arizona and Nevada also received notification of this project.

A press release announcing the availability of this environmental assessment is sent to the above entities and is published on the Lake Mead NRA Internet Web site (http://www.nps.gov/lame). Individuals and organizations can request the environmental assessment in writing, by phone, or by e-mail.

Lake Mead NRA's mailing list is comprised of 126 federal and state agencies, individuals, businesses, and organizations. The environmental assessment will be distributed to those individuals, agencies, and organizations likely to have an interest in this project. Entities on the park mailing list that do not receive a copy of the environmental assessment will receive a letter notifying them of its availability and methods of accessing the document. Copies of the environmental assessment are available at area libraries, including: Boulder City Library, Clark County Community College (North Las Vegas), Clark County Library, Las Vegas Public Library, Mohave County Library (Kingman, AZ), Sunrise Public Library (Las Vegas), University of Arizona Library (Tucson, AZ), University of Nevada- Las Vegas James R. Dickinson

Library, Meadview Community Library, Moapa Valley Library (Overton, NV), Mesquite Library, Mohave County Library (Lake Havasu City, AZ), Laughlin Library, Searchlight Library, and Washington County Library (St. George, UT). Comments on this document will be accepted during the 30-day review period.

A copy of the environmental assessment can be obtained by direct request to:

National Park Service, Lake Mead NRA
Attention: Compliance Office
601 Nevada Way
Boulder City, Nevada 89005
Telephone: (702) 293-8956

## SECTION VI: LIST OF PREPARERS

Michael Boyles, Environmental Compliance Specialist
Rosie Pepito, Cultural Resources Specialist
Chanteil Walter, Environmental Compliance Technician
Steve Daron, Park Archaeologist
Gary Warshefski, Deputy Superintendent

## SECTION VII: REFERENCES

**U.S. Public Laws, Codes, Federal Regulations, Statutes, and Acts**

All U.S. Public Laws, Codes, Federal Regulations, and Statutes can be found at the Office of the Federal Register, U.S. Government Printing Office, Washington, DC. Many can be found on the Internet at http://www.gpo.gov.


*Abandoned Shipwreck Act of 1987. U.S. Code*. Vol 43, secs. 2101-2106, *U.S. Public Law* 100-298.

*American Indian Religious Freedom Act. U.S. Code.* Vol 42, secs. 1996-1996a, *U.S. Public Law* 95-341, 103-344.

*Antiquities Act of 1906. U.S. Code*. Vol. 16, secs. 431-3; ch. 3060, *U.S. Public Law* 209. *U.S. Statutes at Large* 34:225.

*Archeological Resources Protection Act of 1979. U.S. Code.* Vol. 16, secs. 470aa-470mm, *U.S. Public Law* 96-95.

*Clean Air Act of 1990 (as amended). U.S. Code.* Vol. 42, secs. 7401-671, *U.S. Public Law* 88-206.

*Clean Water Act of 1987.* (See *Federal Water Pollution Control Act of 1972*.) Secs 303, 313, 402.

*Curation of Federally-Owned and Administered Archeological Collections. Code of Federal Regulations*, Title 36, Section 79.

*Enabling Legislation.* See *U.S. Public Law* 88-639.

*Endangered Species Act of 1973. U.S. Code.* Vol.16, sec. 1531 et seq., *U.S. Public Law* 93-205.

*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994). Executive Order 12898.*

*Federal Water Pollution Control Act of 1972 (Clean Water Act) (as amended). U.S. Code* Vol. 33, secs. 1251-387, *U.S. Public Law* 92-500, 95-217.

*Historic Sites, Buildings and Antiquities Act. U.S. Code.* Vol. 16, secs. 461-467, *U.S. Public Law* 74-292.

*Indian Sacred Sites (1996). Executive Order 13007.*

*National Environmental Policy Act of 1969 (NEPA). U.S. Code.* Vol. 42, secs. 4321-70a, *U.S. Public Law* 91-190.

*National Historic Preservation Act of 1966. U.S. Code.* Vol. 16, secs. 5901-6011, *U.S. Public Law* 89-665, 96-515 (as amended, 1992).

*National Parks and Recreation Act of 1978 (The Redwoods Act). U.S. Code*. Vol. 16, sec 1a-1, *U.S. Public Law* 95-625.

*National Park Service Concessions Management Improvement Act of 1998. U.S. Code* Vol. 16, sec. 5951-5966, *U.S. Public Law* 105-391.

*National Park Service General Authorities Act of 1970. U.S. Code* Vol. 16, sec. 1a-1 et seq., *U.S. Public Law* 91-383.

*National Park Service Organic Act of 1916. U.S. Code.* Vol. 16, sec. 1.

*Native American Graves Protection and Repatriation Act of 1990. U.S. Code.* Vol. 25, secs. 3001-13, *U.S. Public Law* 101-601.

*Redwood National Park Expansion Act of 1978. U.S. Public Law* 102-575, Title 28.

*Reservoir Salvage Act. U.S. Code.* Vol. 16, secs. 469-469c, *U.S. Public Law* 86-523, 93-291.

*Safe Drinking Water Act of 1996. U.S. Code.* Vol. 42, 300f-j-26.

*U.S. Public Law* 88-639. "Enabling Legislation," Lake Mead National Recreation Area. 88th Cong., 653d sess., 8 October 1946.

## References Cited

Council on Environmental Quality, Executive Office of the President

1978 "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act." *Federal Register* 43:55978-56007.

Las Vegas, City of.

2004a Information Extracted from "History." Available on the Internet at http://www.ci.las-vegas.nv.us/history/default.htm.

2004b Information Extracted from "City of Las Vegas Summary Report, Population Estimate July 1, 2001." Available on the Internet at http://www.ci.las-vegas.nv.us/planning/977_1188.htm.

Lewis, Ralph H.
1976 "Manual for Museums." Washington, DC. U.S. Government Printing Office. Nevada.

National Park Service (NPS), U.S. Department of the Interior
1986 *Final Enviornmental Impact Statement, Lake Mead National Recreation Area General Management Plan.* Boulder City, Nevada.

1991 *NPS-77: National Resources Management Guidelines.* Washington, DC.

1996 "Best Management Practices, Watercraft and Marina Operations, Dry Boat Storage, and Boat Repair Services." Lake Mead National Recreation Area, Utility Systems Branch, Division of Maintenance and Engineering, October 31.

1998 *Director's Order 28: Cultural Resource Management.* Washington, DC. National Park Service.

2000a "Lake Mead National Recreation Area Resource Management Plan." Boulder City, Nevada.

2000b *Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision Making.* Washington, DC. National Park Service.

2000c "Lake Mead National Recreation Area Strategic Plan, 2000-2005." Boulder City, Nevada.

2000d "Museum Handbook," Park I Museum Collections (Revised 2001). Washington, DC. National Park Service.

2001a *Director's Order 6: Interpretation*. Washington DC. National Park Service.

2001b "Management Policies." Washington, D.C. National Park Service.

2002a *Environmental Assessment for the Las Vegas Bay Marina Emergency Relocation*. Boulder City, Nevada.

2002b *Lake Mead National Recreation Area Lake Management Plan and Final Environmental Impact Statement*. Boulder City, Nevada.

2004a Information Extracted from "National Park Service, Lake Mead National Recreation Area, Park Facts. Available on the Internet at http://www.nps.gov/lame/pphtml/facts.html.

2004b Information Extracted from "Air Quality Glossary." Available on the Internet at http://www2.nature.nps.gov/air/aqbasics/glossary.htm.

State of Nevada

2000 Nevada Administrative Code, Chapter 445A.118-445A.225, Standards of Water Quality, Codification as of September.

U.S. Bureau of Reclamation (BOR), U.S. Department of the Interior

2000 *Colorado River Interim Surplus Criteria Final Environmental Impact Statement*. Lower Colorado Regional Office, Boulder City, Nevada.

U.S. Environmental Protection Agency (EPA)

2002 Information Extracted from "National Recommended Water Quality Criteria." Available on the Internet at http://www.epa.gov/waterscience/pc/revcom.pdf.

2004 Information Extracted from "The Green Book: Currently Designated Nonattainment Areas for All Criteria Pollutants Listed by State, County, then Pollutant, as of August 3, 2004." Available on the Internet at http://www.epa.gov/oar/oaqps/greenbk/ancl.html#NEVADA.

## Appendix A: Press Release Announcing Public Scoping

National Park Service
U.S. Department of the Interior

Lake Mead National
Recreation Area

601 Nevada Way
Boulder City, NV 89005

702.293.8947 phone
702.293.8936 fax

**Lake Mead National Recreation Area News** Release
**For Immediate Release: June 21, 2004**
**Release: 47-04**
**Roxanne Dey - 702.293.8947**

# Submerged Cultural Resource Plan Being Prepared at Lake Mead National Recreation Area

Officials at Lake Mead National Recreation Area are soliciting public comments on a proposal to prepare a Submerged Cultural Resources Management Plan.

Due to lowering water levels at Lake Mead National Recreation Area, many submerged cultural resources are now located in shallow water, and others have risen above the surface. Increased accessibility to these resources has created the need for a policy on how to protect them. The proposed plan will evaluate the significance of known sites and the level of protection required. Some of the resources to be addressed are the B-29 airplane, St. Thomas, the Salt Mines, Fort Callville, Rioville, and structures associated with the construction of Hoover Dam. Provisions will also be made for additional resources that are discovered as the lake level continues to decline.

The National Park Service is in the process of preparing an environmental assessment and management plan to identify and evaluate feasible alternatives, including no action, for evaluating and protecting these cultural resources. Officials at Lake Mead National Recreation Area are seeking public feedback on the issues and potential alternatives. Written comments should be sent by July 21, 2004 to: Superintendent, Lake Mead National Recreation Area, Attention: Compliance Office, 601 Nevada Way, Boulder City, Nevada 89005.

-end-